IN THE DRAWINGS

Proposed changes to Figs. 1-3A are submitted herewith, with a Letter to the Official Draftsman.

REMARKS

Reconsideration and allowance are respectfully requested in light of the above amendments and the following remarks.

Applicant acknowledges with appreciation the indication in the Final Rejection of allowable subject matter in claim 36.

Proposed changes to Figs. 1-3A are submitted herewith to overcome the objections thereto. Regarding the issue of a missing Fig. 1 from the application, Fig. 1 is on the same sheet as Fig. 2.

Claims 22-27, 31-34, 37, and 39-42 stand rejected, under 35 USC §102(e), as being anticipated by Pollack et al. (US 6,192,026). Claims 28-30, 35, and 43 stand rejected, under 35 USC §103(a), as being unpatentable over Pollack in view of Seki et al. (US 5,771,224). Claim 38 stands rejected, under 35 USC §103(a), as being unpatentable over Pollack in view of Vook et al. (US 5,982,327). The Applicant respectfully traverses the rejections.

The Applicant respectfully submits that Pollack fails to disclose the feature recited in independent claim 22 of allocating the same communication control information to each of specific subcarriers of the OFDM signal and transmitting the OFDM signal. With the claimed invention, for example, the same communication control information A is assigned to both

subcarrier 1 and subcarrier 2 of an OFDM signal for transmission at the same time. Pollack discloses assigning mutually exclusive (i.e., different) communication control information T_1, T_2, ... T_5 to five different subcarriers communicated at the same time (see Final Rejection page 3, last three lines).

Accordingly, the Applicant submits that Pollack does not anticipate the subject matter of claim 22. Independent claims 27, 34, 39, and 42 similarly recite the above-mentioned feature distinguishing apparatus claim 22 from Pollack, although claims 39 and 42 do so with respect to a method. For the same reason this feature distinguishes claim 22 from Pollack, so too does it distinguish claims 27, 34, 39, and 42. Therefore, allowance of claims 22, 27, 34, 39, and 42 and all claims dependent therefrom is warranted.

A fuller explication of Pollack's OFDM system is provided below to supplement the brief description provided above.

Pollack discloses in Fig. 6 a request access (RA) burst 404 containing 190 bits that are divided into 5 identical fields 602 (Pollack col. 8, lines 52-54). Up to 5 data communication devices (DCDs) 202, for example, can submit 38-bit access request messages during RA burst 404 (col. 8, lines 54-56). Each of the parallel access request opportunities within a burst is referred to as an "RA channel" (col. 8, lines 56-58). The unique design

of RA burst 404 enables simultaneous access attempts to be heard by AP 204, thereby reducing contention among network DCDs 202 (col. 8, lines 58-60).

In an OFDM system, the tones within a burst are substantially independent from one another, that is, no inter-carrier interference is produced (col. 8, lines 65-67). This property is exploited to create the parallel RA channels within the RA burst (col. 8, line 67, through col. 9, line 1). This is accomplished by dividing the burst's tones into 5 mutually exclusive subsets (col. 9, lines 1-3). Each subset of tones constitutes one RA channel (col. 9, lines 3-4). Those tones that are not assigned to a given RA channel are not energized by the DCD using that particular RA channel (col. 9, lines 4-6). That is, a frequency-domain symbol of zero magnitude is transmitted on those tones belonging to all other RA channels (col. 9, lines 6-8).

Fig. 7 depicts the division of the tones of RA burst 404 into the five channels 602 (col. 9, lines 9-10). The tones associated with each RA channel 602 are made up of data tones (D_i) and training tones (T_i), where i denotes the RA channel number (col. 9, lines 10-12). With this approach, 5 DCDs 202 each using a different RA channel 602 can transmit simultaneously

during the RA burst without interfering with one another (col. 9, lines 28-30).

The i^{th} RA channel uses tones n=i+8k, k=0,1 . . . 31, for training (col. 9, lines 20-21). The AP processes the RA burst in the usual fashion up through FFT stage 314 (col. 9, lines 30-31). Then the frequency domain tones are separated into the 5 sets of tones corresponding to the 5 RA channels (col. 9, lines 32-33). Using the i^{th} set of training tones T_i, the channel response corresponding to the i^{th} RA channel is estimated separately (col. 9, lines 33-36). The channel response estimate for the i^{th} channel is applied to the set of RA channel data tones D_i to recover the data bits that were sent on the i^{th} RA channel (col. 9, lines 36-38).

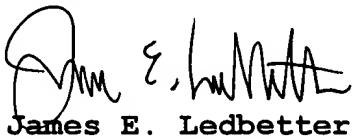
As may be determined from the Pollack's disclosure, D_i corresponds to the user data recited in claim 22 and T_i corresponds to the claimed communication control information. The five sets of control signals T_i, each corresponding to one of the five channels, are mutually exclusive so that their simultaneous communication does not produce inter-symbol interference. As a result, all five sets of control signals T_i may be simultaneously received and the response of each channel may be estimated due to the independence of the five sets of control signals T_i. Once the channel response is estimated for

each channel, data communicated within the channel may be better received. Accordingly, Pollack does not disclose the feature recited in claim 22 of allocating the same communication control information to each of specific subcarriers of the OFDM signal and transmitting the OFDM signal. Independent claims 27, 34, 39, and 42 similarly recite the above-mentioned feature distinguishing apparatus claim 22 from Pollack.

In view of the above, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,



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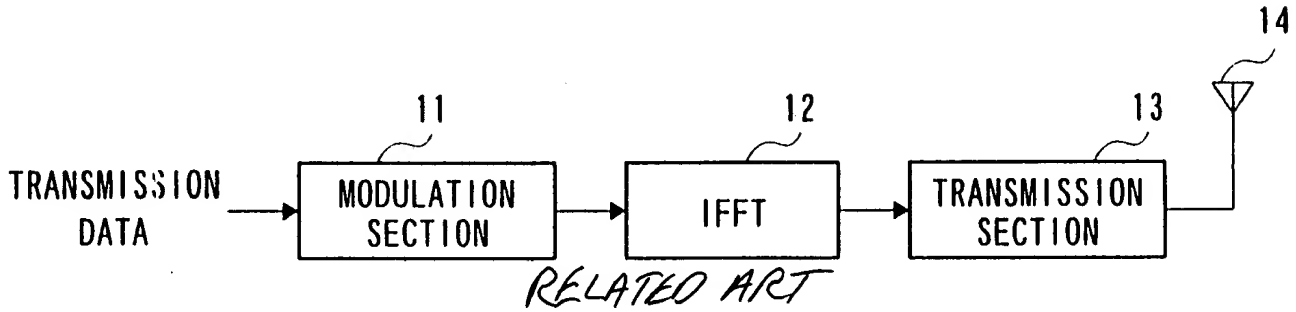
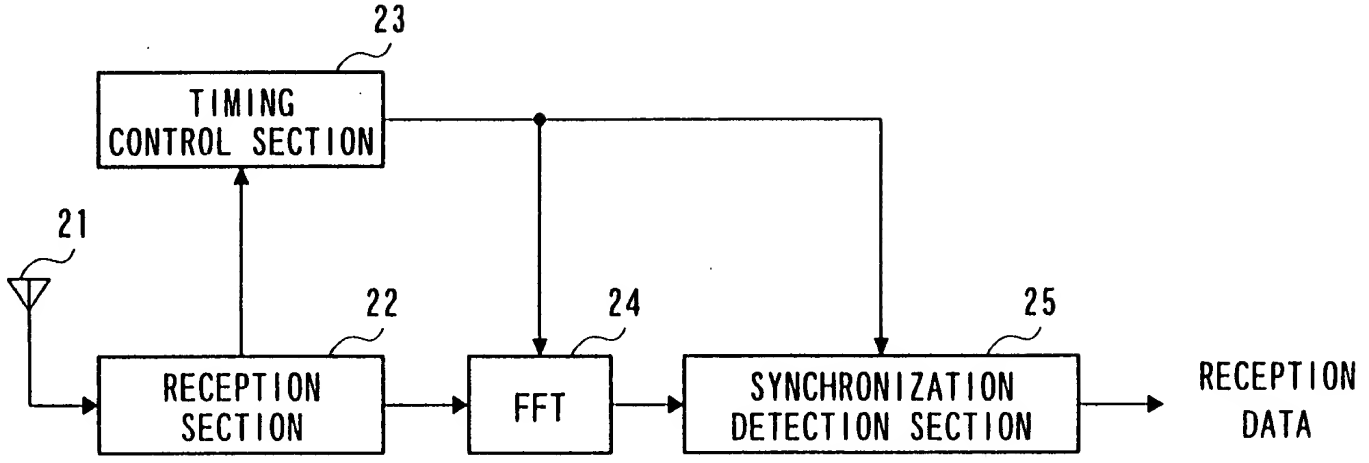


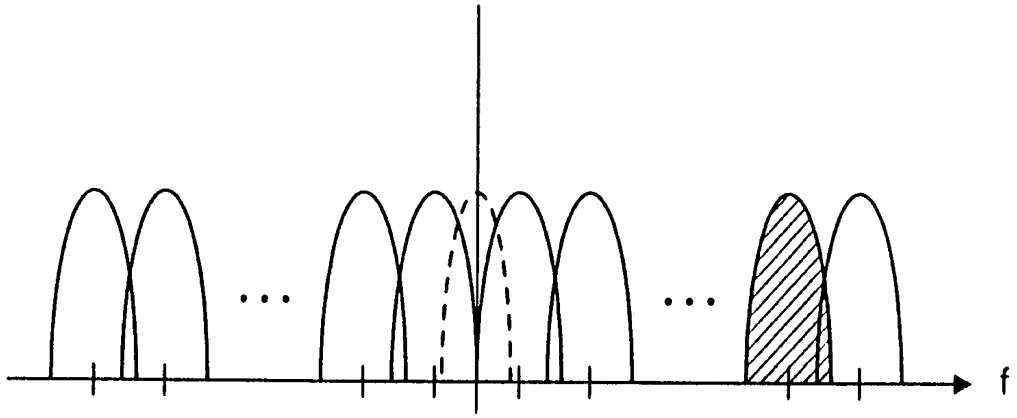
RELATED ART

FIG. 1



RELATED ART

FIG. 2



RELATED ART

FIG. 3A

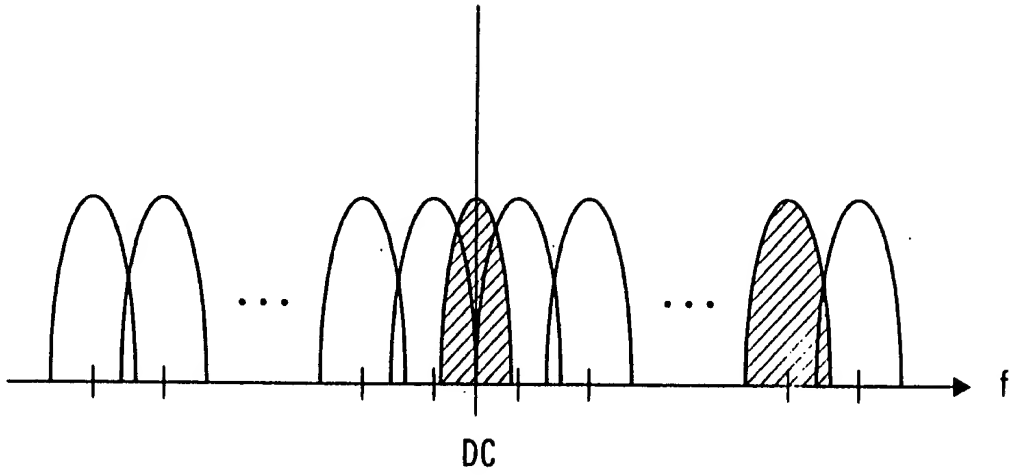


FIG. 3B